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taking Boiling-points (p. 156). *Mem. Amer. Acad.*, IX. 135. (11 Oct., 1864.)

6. On a New Process for the Determination of Sulphur in Organic Compounds, by Combustion with Oxygen Gas and Peroxide of Lead. *Proc. Amer. Acad.*, VI. 472. (14 March, 1865.)
7. On a New Process of Organic Elementary Analysis for Substances containing Chlorine. *Proc. Amer. Acad.*, VII. 84. (31 Jan., 1866.)
8. Note on an Improved Apparatus for the Determination of Vapor Densities by Gay-Lussac's Method; being a Modification of Bunsen's Apparatus for measuring Aqueous Vapor. *Proc. Amer. Acad.*, VII. 99. (10 April, 1866.)
9. Hydrocarbons of Pennsylvania Petroleum. *American Journal of Science*, 1868, (2d series.) XLV. 262.
10. (Posthumous.) On the Volatile Hydrocarbons in Pennsylvania Petroleum. *Proc. Amer. Acad.*, XXVII. 56.
11. (Posthumous.) Note on a Criticism of the Author's Apparatus for Fractional Condensation. *Proc. Amer. Acad.*, XXVII. 89.
12. (With F. H. Storer.) Examination of a Hydrocarbon Naphtha, obtained from the Products of the Destructive Distillation of Lime-soap. *Mem. Amer. Acad.*, IX. 177. (9 Aug., 1865.)
13. (With F. H. Storer.) Examination of Naphtha obtained from Rangoon Petroleum. *Mem. Amer. Acad.*, IX. 208. (9 Aug., 1865.)

## SERENO WATSON.

SERENO WATSON, a Fellow of this Academy, died at his home in Cambridge on March 9, 1892.

To most of his associates here he was known only as a regular attendant at our meetings, and an occasional contributor to our Proceedings, presenting his communications, which were of a technical character, by title.

His co-laborers in Natural History recognized him as a critical student in the department of Descriptive Phænogamic Botany, who enriched our volumes by the results of work of a high order.

Those who were engaged in neighboring fields of botanical investigation knew him as a faithful friend of few words. He was observed by them to carry on his researches in silence, seldom alluding to any special task in hand until it drew near completion, and even then only briefly. He was always ready to interrupt his studies to assist others in theirs; he would enter with unconcealed pleasure into the plans of others, but without ever speaking of his own.

Hence it happens that his intimate friends, when called upon to

speak in his memory, think first of the reserve and silence in which he walked. The question arises in their minds at the outset, how far is one justified in breaking through a reserve which was unbroken by him, and revealing to others the features of his blameless and useful life. This question is answered in part by a few letters written by our friend to relatives, who were sometimes naturally importunate for details of his movements; some of these memoranda have been placed at my disposal for the execution of the present task. Beyond the limits of these letters, and of others sent me by his relatives and nearest friends, the present sketch will not venture to pass, until it reaches that period of his life which becomes a part of the history of American Botany.

Sereno Watson was born at East Windsor Hill, Connecticut, on December 1, 1826. His father, who had been a merchant in New York City, passed the last years of his life on a farm which he had inherited. On this farm Sereno's boyhood was passed, and here he developed a vigorous physique. Until his very last year, he was capable of sustained effort with little fatigue, from which it came to pass that he was wont to tax his strength to its utmost limit, often imprudently or with only slight regard to consequences.

The class in which he graduated at Yale, in 1847, was one of the largest and strongest at that period. In the words of one of his classmates, he "was always highly spoken of by those who knew him, but, as in later years, was so reticent as to his personal history that probably no one knew much about him." He was considered a good scholar. He distinguished himself especially in classics, taking prizes for Latin composition and translation.

In 1851 Watson wrote thus to a relative: "Three years and a half ago I graduated, and I doubt if there was ever a mortal cursed with more diffidence, less energy, or a head fuller of strange notions, and who, to make the matter worse, was so fully conscious of it all. The most that I have done since then has been partially to overcome these drawbacks to all success. On leaving college I knew not what to do. I had no predilection for any of the professions. The only course left open to me for getting a living was teaching school." To this work he went at once, and entered on a very varied experience. He taught common or district schools in Connecticut, Long Island, and Rhode Island, and in the Academies at Allentown, Penn., and Tarrytown, N. Y.

While teaching in Tarrytown, he wrote to a relative as follows: "My experience has taught me many a lesson which I probably would

not soon have learned otherwise, and school teaching is not the least improving of schoolmasters. It is true I have lost time in gaining a profession, and shall lose more, but I scarcely regret it."

In the same letter he says: "I might say more of myself, my plans and my opinions. Many an episode, pleasing, displeasing, and ridiculous, might be inserted in the brief history upon the last two pages, but I dislike to speak so much of myself. It is perhaps a fault in my character, but I am rarely frank enough to confide to any one what only relates to myself alone."

Very early in his career as a teacher, he began the study of medicine, and, after the fashion of that time, with a practitioner as a preceptor, — at first with Dr. Watson of Scantic, and afterwards with Dr. Sill of Windsor. Of the next year he writes: "I lived through the winter of 1849-50 in New York," attending medical lectures at New York University, "and left with a much diminished respect for medical practitioners and professors in general, apart from medicine itself, which is a noble profession."

In 1851 he taught in Tarrytown; in 1852 he was at home, farming and studying.

Of the next few years, his brother Louis, a physician, gives the following account: "I wrote to him to come to Quincy, Illinois, where I was established, to study with me, see practice, and practise for himself, on cases that I could give him, and such as were likely to apply to him. He accepted, and was preparing to leave East Windsor, when his uncle, Rev. Dr. Julius A. Reed, of Davenport, Iowa, one of the founders of Iowa College, and one of the Trustees, induced him to go there instead, act as Tutor in the College, and teach in the Preparatory School. He reached there in September, and remained as Tutor till July, 1854. He then came to Quincy, studied in my office under my direction, and attended urgent calls in my absence. I was city physician at that time, and turned over to him most of that business, and gave him a small salary. He got some business in respectable families of his church, and more among the poor, from whom he collected but little. A physician of about seventy years fell and broke his femur. Sereno attended him throughout with good success, without once consulting me, and I think I knew nothing of it at the time. I remember only two cases of disease which he asked me to see with him, — both serious and complicated, and one of which proved fatal. His practice of medicine there was entirely satisfactory to his patients as far as I know. He was not legally qualified to practise, of course, but he was better informed than some who were. My brother Henry,

late of Northampton, then in Greensboro, Alabama, president of an insurance and banking company, offered him a position as clerk or cashier, and he left Quincy in 1856, which was the end of his doctoring."

His brother Louis answers also a question which may be noted at this point: "As to his botanical studies I know but little. I suppose they were taken up among his studies for the medical profession. When he was at Quincy I occasionally picked up plants in the Mississippi bottoms, taking them to my office for examination. If I could not readily determine them by the only Botany I then had (Beck's), I referred them to him. He had more patience than I had, and determined them. When in the United States service in the Civil War, in the Southern Mississippi, Tennessee, and Missouri, I picked up plants unknown to me, and, having no books, I sent them to him to learn what they were, and received replies naming them."

He remained in the South engaged in insurance and banking until the breaking out of the Civil War. During this time he must have devoted a good share of his leisure to the examination of the plants around him, for he later manifested a great degree of interest in any rarities coming from that region.

Dr. Henry Barnard, then editor of the "Journal of Education," gave him on his arrival at the North, in 1861, some work connected with the Journal, all of which was satisfactorily done. Of this stage in Watson's life, the venerable Dr. Barnard speaks most affectionately. He recalls with vividness Watson's interest in plants, and his eager desire to aid beginners in their work of determining species. But he did not think of him at all as a botanist at this time; he seemed just as likely to turn his hand to one pursuit as to another.

In 1866, Watson entered the Sheffield Scientific School of Yale, at the age of forty, as a student, but not to pursue botanical investigations. He went there to carry on studies in chemistry and mineralogy. He impressed his teachers in these departments as being capable and diligent. The possible, or rather probable design for which these special studies were undertaken must have been to fit him for a residence in California, which he had now in mind. The studies had a practical turn. His nephew remembers distinctly that during this time they made a journey together to Loudville, Conn., to examine an abandoned lead and silver mine, and still another visit to an abandoned iron mine.

These facts are here mentioned not so much to indicate the range of his studies as to point out the thoroughness with which he endeavored

to prepare himself for the next work in view. But he was now on the eve of a total and unforeseen change of plan, by which he soon entered on a sphere of activity in which all his previous training was utilized. This change of base and plan are best described in his own words. The account is thoroughly characteristic. It is dated San Francisco, April 28, 1867.

"The request in your last letter that I should 'open' would have received prompter attention had there been anything to say for myself beyond conjecture. There is at least this much certain at present, that I have left New England again and am safely landed in this capital city of the Land of Gold. I have been ready to start on short notice for several months, but one thing after another turned up which involved the possibility of my not coming at all, so that I was kept in a state of uncertainty, and not able to say definitely whether I was coming here or not. One proposition was made to me to take ten thousand dollars and go into the drug business at Selma, but this fell through. Another was to buy a saw-mill and go into the lumber business with Mr. Wemyss at Mobile. A week's delay of the mails flanked that movement. Mr. Barnard offered me a clerkship in the new Educational Department at Washington, of which he is appointed Commissioner, and this I declined. One Friday I found myself clear of all questions of the kind, and, to give no time for any more to come, I determined to take the next steamer, which sailed on Monday. To pack up, close up, say good by, and get to New York by Saturday evening, left of course very little spare time. I wrote no letters, and did not stop to see friends in East Windsor or Hartford, but made my escape by the flank, and am consequently now here. . . .

"I am not yet settled, and do not know where it will be nor at what business. I started with a dozen strings to my bow, some of which snapped at the first trial. I am confident that some of the rest will do better. I have no idea of going to the mines."

It appears that at first Watson thought of farming in California. Even in the early years after graduation from college he had contemplated taking a farm in Connecticut with his brother, and this occupation always had great attractions for him. But suddenly he gave up the idea of purchasing a farm in California, and started from Woodland across the Sierra Nevada to join the Geological Survey of the Fortieth Parallel. Doubtless he had heard something of the proposed survey from the leader of the expedition, Clarence King, who passed a part of the previous winter in New Haven.

He reached the camp on the Truckee River on a July night, coming

in covered with dust, foot-sore, with his boots and pack slung over his shoulder, and presenting the appearance of one unused to rough mountaineering. But he would not rest, eat, nor wash until he had arranged with the chief of the party for some sort of work to do. He was at first put to plant collecting in connection with miscellaneous topographical work. The botanist of the expedition, Mr. Bailey, now Professor of Botany at Brown University, had been too ill to botanize in the desert, and this work fell naturally into the hands of Watson. Under date of August 18 he writes: "I am informed tonight of a change in my position. I have worked thus far without any pay beyond my expenses, and giving my special attention to botany, but I am now assured of a salary, small as yet, but better than nothing, and am detailed to the topographical department."

One of the members of the party writes: "Watson was an exceedingly hard worker, — on the tops of the mountains, out in the broad sage-brush flats, down in the cañons, and tramping amongst the hot springs and alkali soils for plants. What impressed me the first year was not only his energy, but the systematic way in which he searched all kinds of soils and exposures for variations in plant life."

Of him the leader of the expedition says: "He impressed me as a man of work, grimly and conscientiously in earnest. . . . He smiled only as a forced concession to humor. Everything pertaining to his duty was sacred. . . . He soon learned to ride, and after the first anxieties regarding his duties had worn off he began to enjoy the campaign life and the weird scenery with the greatest enthusiasm. Bailey grew more and more subject to the camp illness, and at last gave up and went home to the East. . . . I then installed Watson in charge of the Botany. He was then as nearly perfectly happy as I have ever seen a human being. There were periods of at least five minutes at a time when the hereditary New England grimness vanished from his face, and he wore a free, careless air, as if his grandfather might have come from at least as far south as Virginia. If these excessive moments were rare, the general tone had grown calmly happy, and so I believe he remained till his connection with the Fortieth Parallel ceased."

Another expression by his chief, states what was equally true of his herbarium investigations: "He worked without the least nervous excitement or hurry, but continuously, and for a calm man rather rapidly."

The report on the botanical studies, and the description of the col-

lections made at this time, were prepared in the herbarium of Professor Eaton, at New Haven and at Cambridge. But one can see that the notes were made on the spot where the plants were found, and nothing was left for the memory to lose. Watson wrote thus in a letter concerning the scope of the collection: "My work is at Professor Eaton's house, where all my plants are. I spend from two to twelve hours a day upon them, and it is going to be an everlasting job to work them up. It is the best and largest collection that has ever been brought in by any government party, and promises to yield a fair proportion of new species."

The Report was published in 1871, and confirms fully the statement made in the note which I have read. Not only were the collections the largest, but the notes respecting the surroundings of the plants were more detailed than any that had ever been returned from our Western plains. The notes constitute a fund of information for those who would know the habits of our desert plants.

The last portion of the Report was prepared at Cambridge, in the Gray Herbarium that was his home from 1870. Here he attacked and solved some of the most puzzling questions regarding North American plants, and the results of these researches are given for the most part in the volumes of our Proceedings. His other investigations and his separate works are noticed in the bibliography which is appended to this sketch.

At the time he was taken ill, he was engaged in the attempt to complete the Synoptical Flora of North America, left unfinished by Dr. Asa Gray. For this work his extensive acquaintance with our Western Flora and his conservative views regarding nomenclature specially fitted him. For the most part his botanical practice and principles were in perfect accord with those of his predecessor. His maturity of thought, his wide training in many and diverse fields, and his independence in deciding questions seemed to render his service in the completion of the Synoptical Flora on the lines laid down by its designers absolutely indispensable. At present, the Flora stands as a broken column, twice interrupted in construction.

No sketch of Watson's life, however brief, would be complete without some mention of three journeys other than those of the Survey already described.

One of these was in behalf of the Forestry division of the Tenth Census. For a few friends he prepared a charming sketch detailing his adventures. The sketch gives a glimpse of the keen pleasure which he took in wandering, and his untiring powers of observation.



A second journey was to Guatemala. This study of the tropics was botanically profitable, but it impaired his health. By a curious coincidence he passed considerable time in investigating the Flora of a country from which his classmate, Captain Donnell Smith of Baltimore, has obtained such interesting botanical results.

His third journey was to Europe. I had the great pleasure of accompanying him, and of seeing his delight at the gardens of the Old World. But he shrank here, as always, from even the slightest sacrifice of any time for merely social matters. With two exceptions, he declined all the attentions which were tendered him.

Foreign distinctions were beginning to be bestowed upon him in the last years of his life. He had for some time been a highly valued member in our American academies and associations. But distinctions and honors of all kinds were to him almost a matter of indifference. He accepted the honors less for himself than from a regard for the feelings of others. Nothing was more foreign to his nature than any scramble for priority; hence his reclamations are few. He was averse to holding any office; but when he was forced to submit to this infliction, he surrendered at discretion, and performed his duties not only acceptably and faithfully, but gracefully.

No one who came in contact with him could fail to see how warm and deep were his sympathies. The writer had the great privilege of seeing Watson almost every day for about twenty college years, and he can bear willing testimony to the truth of the following words, written by one of the classmates of 1847, Professor Jesup of Dartmouth College:—

“His was one of those true and gentle natures that can always be trusted. He dreaded most of all to be a source of anxiety to his friends, not realizing that a fuller expression of his hopes and fears and plans would often have afforded them vastly more relief than pain. . . . In the family he was self-denying and very thoughtful of the interests of others, doing many a kind act, the recipient of which knowing nothing of the source from which it came. . . . He was a man of decidedly religious character, though he could seldom be induced to take any public part in religious exercises. He was fond of his church, and for years instructed a Bible class.

“He seemed more deeply impressed than almost any one I have ever known, that life is short, and that the field is growing more and more extensive every day. He believed that he must work, while the day lasted and with no reference to any reward except the knowledge that he had done what he could. I doubt whether he ever thought of posthumous fame.”

But as we all know, this unsought reward of posthumous fame is his. That it should have come to one who did not fall upon his life work until middle age shows how well that life work was done after it was well in hand. One of his friends has fitly said: "Had he died twenty years after graduation, the world would have known little of him, and his classmates would have considered his life a failure. That long period, however, comprised years of diversified preparation, which enabled him to bring to his chosen task thoroughly trained powers and gave him a range of knowledge drawn from the study of several sciences."

A loyal son of Yale College, he was also devoted to the College of his adoption. Almost his last request was that his remains might be placed in the Harvard University grounds at Mount Auburn. There they rest, near by the tomb of his associate and constant friend, Asa Gray.

The following list of Dr. Watson's papers has been prepared by J. A. Allen, Ph. B., Assistant at the Gray Herbarium, Cambridge.

United States Geological Exploration of the Fortieth Parallel, Clarence King, Geologist in charge. Vol. V. Botany. By Sereno Watson, aided by Prof. Daniel C. Eaton, and others. Illustrated by a map and forty plates. Washington, 1871.

List of Plants collected in Nevada and Utah, 1867-69; numbered as distributed. United States Geological Exploration of the Fortieth Parallel, Clarence King, U. S. Geologist, in charge. Sereno Watson, Collector. Washington, 1871.

Contributions to American Botany. I. New Plants of Northern Arizona and the Region adjacent. *American Naturalist*, Vol. VII. pp. 299-303, 1873.

Contributions to American Botany. II. Revisions of the extra-tropical North American Species of the Genera *Lupinus*, *Potentilla*, and *Ceanothus*. *Proc. Amer. Acad.*, Vol. VIII. pp. 517-618, 1873.

Contributions to American Botany. III. On Section *Avicularia* of the Genus *Polygonum*. *American Naturalist*, Vol. VII. pp. 662-665, 1873.

Note on *Chenopodium leptophyllum*, Nutt. *Bulletin Torrey Botanical Club*, Vol. IV. p. 63, 1873.

Contributions to American Botany. IV. Revision of the North American *Chenopodiaceæ*. *Proc. Amer. Acad.*, Vol. IX. pp. 82-126, 1874.

List of Plants collected in Nevada, Arizona, and Utah, upon Lieut. G. M. Wheeler's Survey, in 1871 and 1872. By Sereno Watson. (In Catalogue of Plants collected in the years 1871, 1872, and 1873, with Descriptions of New Species. Geographical and Geological Explorations

- and Surveys West of the One Hundredth Meridian, Lieut. Geo. M. Wheeler in charge. Washington, 1874.)
- Contributions to American Botany. V. Revision of the Genus *Ceanothus*, and Descriptions of New Plants, with a Synopsis of the Western Species of *Silene*. Proc. Amer. Acad., Vol. X. pp. 333-350, 1875.
- Some Notes and Descriptions of New Species, by Sereno Watson, inserted in Botanical Observations in Southern Utah in 1874, by Dr. C. C. Parry. American Naturalist, Vol. IX. pp. 267-273 and 346-351, 1875.
- Botany of California. Vol. I. Polypetalæ, by W. H. Brewer and Sereno Watson. Gamopetalæ, by Asa Gray. Cambridge, Mass., 1876.
- Contributions to American Botany. VI. 1. On the Flora of Guadalupe Island, Lower California. 2. List of a Collection of Plants from Guadalupe Island, made by Dr. Edward Palmer, with his Notes. 3. Descriptions of New Species of Plants, chiefly Californian, with Revisions of certain Genera. Proc. Amer. Acad., Vol. XI. pp. 105-148, 1876.
- Historical Note on Beans. Bulletin Torrey Botanical Club, Vol. VI. p. 104, 1876.
- Contributions to American Botany. VII. Descriptions of New Species of Plants, with Revisions of *Lychnis*, *Eriogonum*, and *Chorizanthe*. Proc. Amer. Acad., Vol. XII. pp. 246-278, 1877.
- Note on *Iris*. American Naturalist, Vol. XI. pp. 306-307, 1877.
- Bibliographical Index to North American Botany; or Citations of Authorities for all the recorded Indigenous and Naturalized Species of the Flora of North America, with a Chronological Arrangement of the Synonymy. Part I. Polypetalæ. No. 258, Smithsonian Miscellaneous Collections. Washington, 1878.
- Contributions to American Botany. VIII. The Poplars of North America. American Journal of Science and Arts, Vol. XV. pp. 135-136, 1878.
- Report upon United States Geographical Surveys West of the One Hundredth Meridian, in charge of Lieut. Geo. M. Wheeler. Vol. VI. Reports upon the Botanical Collections made in Portions of Nevada, Utah, California, Colorado, New Mexico, and Arizona, during the years 1871, 1872, 1873, 1874, and 1875. By J. T. Rothrock and others. With thirty plates. The Leguminosæ by Sereno Watson. Washington, 1878.
- Review of Gray's Synoptical Flora of North America. American Naturalist, Vol. XII. pp. 686-689, 1878.
- Characterized Description of *Lilium Parryi*, by Sereno Watson; inserted in A New Californian Lily, by Dr. C. C. Parry. With two plates. Proc. Davenport Acad. of Nat. Sciences, Vol. II. pp. 188-189. Davenport, Iowa, 1880.

- Contributions to American Botany. IX. 1. Revision of the North American Liliaceæ. 2. Descriptions of some New Species of North American Plants. Proc. Amer. Acad., Vol. XIV. pp. 213-303, 1879.
- Botany of California. Vol. II. By Sereno Watson. Cambridge, Mass., 1880.
- Contributions to American Botany. X. 1. List of Plants from Southwestern Texas and Northern Mexico, collected chiefly by Dr. E. Palmer in 1879-80. — I. Polypetalæ. 2. Descriptions of New Species of Plants from our Western Territories. Proc. Amer. Acad., Vol. XVII. pp. 316-382, 1882.
- Contributions to American Botany. XI. 1. List of Plants from Southwestern Texas and Northern Mexico, collected chiefly by Dr. E. Palmer in 1879-80. — II. Gamopetalæ to Acotyledones. 2. Descriptions of some New Western Species. Proc. Amer. Acad., Vol. XVIII. pp. 96-196, 1883.
- Review of Henry John Elwes's Monograph of the Genus *Lilium*. American Journal of Science and Arts, Vol. XXV. pp. 82-83, 1883.
- Manual of the Mosses of North America. By Leo Lesquereux and Thomas P. James. With six plates illustrating the Genera. (Revised before publication by Sereno Watson.) Boston, 1884.
- Contributions to American Botany. XII. 1. A History and Revision of the Roses of North America. 2. Descriptions of some New Species of Plants, chiefly from our Western Territories. Proc. Amer. Acad., Vol. XX. pp. 324-378, 1885.
- Contributions to American Botany. XIII. 1. List of Plants collected by Dr. Edward Palmer in Southwestern Chihuahua, Mexico, in 1885. 2. Descriptions of New Species of Plants, chiefly from the Pacific States and Chihuahua. 3. Notes upon Plants collected in the Department of Yzabal, Guatemala, February to April, 1885. — I. Ranunculaceæ to Connaraceæ. 4. Notes upon some Palms of Guatemala. Proc. Amer. Acad., Vol. XXI. pp. 414-468, 1886.
- Contributions to American Botany. XIV. 1. List of Plants collected by Dr. Edward Palmer in the State of Jalisco, Mexico, in 1886. 2. Descriptions of some New Species of Plants. Proc. Amer. Acad., Vol. XXII. pp. 396-481, 1887.
- Our Tripetalous Species of *Iris*. Botanical Gazette, Vol. XII. pp. 99-101, 1887.
- The Genera *Echinocystis*, *Megarhiza*, and *Echinopepon*. Bulletin Torrey Botanical Club, Vol. XIV. pp. 155-158, 1887.
- A Point in Nomenclature. (Synonymy of *Cliftonia nitida*, Gærtn. fil.) Bulletin Torrey Botanical Club, Vol. XIV. p. 167, 1887.
- Contributions to American Botany. XV. 1. Some New Species of Plants of the United States, with Revisions of *Lesquerella* (*Vesicaria*), and of the North American Species of *Draba*. 2. Some New Species of Mexican Plants, chiefly of Mr. C. G. Pringle's Collection

in the Mountains of Chihuahua, in 1887. 3. Descriptions of some Plants of Guatemala. Proc. Amer. Acad., Vol. XXIII. pp. 249-287, 1888.

Notes, and Notices of new or little known Plants Garden and Forest, Vol. I., New York, 1888: —

- Iris tenuis*, p. 6, fig. 3.
- Note on our Native Irises, p. 18.
- Lilium Grayi*, p. 19, fig. 4.
- Aquilegia longissima*, p. 31, fig. 6.
- Iris bracteata*, p. 43, fig. 8.
- Phlox adsurgens*, p. 66, fig. 11.
- Chionophila Jamesii*, p. 79, fig. 15.
- Cypripedium fasciculatum*, p. 90, fig. 16.
- Rosa minutifolia*, p. 102, fig. 22.
- Hymenocallis humilis*, p. 114, fig. 23.
- Brodiaea Bridgesii*, p. 125, fig. 24.
- Hymenocallis Palmeri*, p. 138, fig. 25.
- Rocky Mountain *Cypripediums*, p. 138.
- Delphinium viride*, p. 149, fig. 29.
- Heliconia Choconiana*, p. 161, fig. 31.
- Camassia Cusickii*, p. 172, fig. 32.
- Amelanchier alnifolia*, p. 185, fig. 34.
- Pitcairnia Jaliscana*, p. 195, fig. 35.
- Pitcairnia Palmeri*, p. 209, fig. 38.
- Philadelphus Coulteri*, p. 232, fig. 40.
- Amelanchier oligocarpa*, p. 245, fig. 41.
- Phlox Stellaria*, p. 256, fig. 42.
- Cypripedium Californicum*, p. 281, fig. 45.
- Erythronium Hendersoni*, p. 316, fig. 50.
- Tigridia Pringlei*, p. 388, fig. 61.
- Phlox nana*, p. 413, fig. 66.
- Hibiscus lasiocarpus*, p. 425, fig. 68.
- Rosa Nutkana*, p. 449, fig. 70.
- Berberis Fendleri*, p. 460, fig. 72.
- Pentstemon rotundifolius*, p. 472, fig. 73.
- Berberis Fremonti*, p. 496, fig. 77.

Note. — Is there a second species of *Conradina*? Bulletin Torrey Botanical Club, Vol. XV. p. 191, 1888.

An erratum (concerning *Cacalia tussilaginoidea*, HBK.) to Contribution XIV. Botanical Gazette, Vol. XIII. p. 322, 1888.

Manual of the Botany of the Northern United States, including the District east of the Mississippi and north of North Carolina and Tennessee. By Asa Gray. Sixth Edition. Revised and extended westward to the 100th Meridian by Sereno Watson and John M. Coulter, assisted by specialists in certain groups. With twenty-five plates, illustrating

the Sedges, Grasses, Ferns, etc. New York, Cincinnati, and Chicago, 1889. Second issue, with corrections, 1890.

Contributions to American Botany. XVI. 1. Upon a Collection of Plants made by Dr. E. Palmer, in 1887, about Guaymas, Mexico, at Muleje and Los Angeles Bay in Lower California, and on the Island of San Pedro Martin in the Gulf of California. 2. Descriptions of some New Species of Plants, chiefly Californian, with Miscellaneous Notes. Proc. Amer. Acad., Vol. XXIV. pp. 36-87, 1889.

The Century Dictionary, an Encyclopedic Lexicon of the English Language, prepared under the Superintendence of William Dwight Whitney. Botany, A—G, by Sereno Watson. New York, 1889.

Notices of new or little known Plants. Garden and Forest, Vol. II., New York, 1889:—

*Neillia Torreyi*, p. 4, fig. 84.

*Rosa humilis*, var. *triloba*, p. 76, fig. 93.

*Helianthus mollis*, var. *cordatus*, p. 136, fig. 100.

*Calochortus Obispoensis*, p. 160, fig. 101.

*Portlandia pterosperma*, p. 208, fig. 105.

*Cordia Greggii*, var. *Palmeri*, p. 233, fig. 106.

*Brodiaea Palmeri*, p. 244, fig. 107.

*Rosa Engelmanni*, p. 376, fig. 121.

*Tigridia buccifera*, p. 412, fig. 125.

Contributions to American Botany. XVII. 1. Miscellaneous Notes upon North American Plants, chiefly of the United States, with Descriptions of New Species. 2. Descriptions of New Species of Plants from Northern Mexico, collected chiefly by Mr. C. G. Pringle, in 1888 and 1889. Proc. Amer. Acad., Vol. XXV. pp. 124-163, 1890.

On the Genus *Eriogynia*. With plate. Botanical Gazette, Vol. XV. pp. 241-242, 1890.

The Relation of the Mexican Flora to that of the United States. Abstract published in the Proceedings of the American Association for the Advancement of Science, Vol. XXXIX. pp. 291-292, 1890.

Notices of new or little known Plants. Garden and Forest, Vol. III., New York, 1890:—

*Rosa foliolosa*, p. 100, fig. 22.

*Lycoris squamigera*, p. 176, fig. 32.

*Schubertia grandiflora*, Mart. & Zucc., p. 368, fig. 48.

Contributions to American Botany. XVIII. 1. Descriptions of some new North American Species, chiefly of the United States, with a Revision of the American Species of the Genus *Erythronium*. 2. Descriptions of new Mexican Species, collected chiefly by Mr. C. G. Pringle, in 1889 and 1890. 3. Upon a wild Species of *Zea* from Mexico. 4. Notes upon a Collection of Plants from the Island of Ascension. Proc. Amer. Acad., Vol. XXVI. pp. 124-163, 1891.

Note changing the Name *Oligonema* to *Golionema*. *Botanical Gazette*, Vol. XVI. p. 267, 1891.

*Pentstemon Haydeni*, n. sp. *Botanical Gazette*, Vol. XVI. p. 311, 1891.

*Atriplex corrugata*, n. sp., and Notes on *Ranunculus glaberrimus*, Hook. and *Ranunculus Macauleyi*, Gray. *Botanical Gazette*, Vol. XVI. pp. 345-346, 1891.

A New *Astragalus*. *Zoe*, Vol. III. p. 52. San Francisco, April, 1892.

On Nomenclature. (In press.) *Botanical Gazette*, Vol. XVII., June, 1892.

Dr. Watson was engaged at the time of his death in the continuation of the Synoptical Flora of North America.

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## ASSOCIATE FELLOWS.

### GEORGE W. CULLUM.

GENERAL GEORGE W. CULLUM was born in the city of New York on the 25th of February, 1809. While he was quite young his family removed to Meadville, Pennsylvania, where he received an excellent preparatory education which well fitted him for admission to the Military Academy at West Point. He was entered, July 1, 1829, and graduated third in his class of forty-three members, July 1, 1833. He was then promoted in the army to Brevet Second Lieutenant, Corps of Engineers, in which corps he was further promoted to Second Lieutenant, April 20, 1836; Captain, July 7, 1838; Major, August 6, 1861; Lieutenant Colonel, March 3, 1863; and Colonel, March 7, 1867. He was appointed Brigadier General of United States Volunteers, November 1, 1861, and received the brevet rank of Major General, U. S. Army, March 13, 1865, in recognition of his services during the Rebellion. July 13, 1874, he was retired from active service according to law, being over the age of sixty-two years.

General Cullum served actively over forty years as a constructor of military works and light-houses, as commander of Engineer troops, as Instructor and Superintendent of the United States Military Academy at West Point, as Aide de Camp and Chief of Staff to the General in Chief of the Army, and as member of various boards to devise seacoast and other fortifications, river and harbor improvements, etc.

He was distinguished as an author of numerous military, scientific, historical, and biographical works, and was a leading spirit in several scientific societies.